Claims:

1. Central control unit for controlling the charging process of a battery, comprising:

- a charger circuit coupled to the battery;

- a circuit for prohibiting said charging process when predetermined conditions are met, said conditions comprise at least the condition of :

- $T_B > T_{max}$, where T_B designates the actual temperature of the battery and T_{max} designates the highest permissible battery temperature,

- and if the battery voltage U_B lies below a predetermined threshold value U_o,

- and if the charging current I_{ch} exceeds a predetermined maximum value I_{max},

- and an end-of-charge condition,

characterized in that said end-of-charge condition is generated when the change of one of the battery current and voltage dI and dU decreases within a predetermined time period below a predetermined threshold level; said prohibiting circuit comprises respective conditional and final prohibition circuits, wherein said final prohibition circuit is associated with two of said conditions of which the first one takes place when the battery voltage U_B lics below a predetermined threshold value U_o and the second condition takes place when the charging current I_{ch} exceeds a predetermined maximum value I_{max}; said conditional prohibition circuit is associated with every other one of said prohibition conditions, said central control circuit comprises furthermore a restart circuit for restarting the conditionally prohibited charging process, said restart circuit comprises a plurality of inputs (1 to 4) through which respective restart signals can be received, wherein a common precondition for any restart operation lies in that the temperature of the battery (T_B) is lower than an acceptable predetermined temperature (T_{ok}), said restart conditions are associated with the same parameters as those constituting said conditional prohibitions, however, the actual values of the restart condition

lying by respective predetermined hystereses below the values of the associated conditional prohibition parameters.

2. The control unit as claimed in claim 1, further comprising a comparator circuit (K) monitoring the inequality $U_B<U_o$, and having an output coupled to a control line (L1), and a semiconductor switch (T1) controlling the operation of said charger and having a control electrode connected to said control line (L1) for disconnecting the charging process if said inequality becomes true.

3. The control unit as claimed in claim 1, wherein said final stop circuit comprising a thyristor (Th1) having a control electrode connected to an input (12) receiving the final stop condition signal, and said final stop circuit is broken upon removal of the battery only.

4. The control unit as claimed in claim 1, wherein said conditional prohibition circuit comprises thyristors (Th2 to Th5) each associated with a respective one of said conditions, and the control electrodes of said thyristors being connected to prohibition inputs (6 to 11) receiving signals of said conditions, and the main circuits of said thyristors being coupled to the control input of a switch (R1) controlling the charging circuit (CH) to disable the same when being activated.

5. The control unit as claimed in claim 4, wherein the main circuits of said thyristors (Th2 to Th5) in the conditional prohibition circuit are connected in series with said restart circuit that comprises a pair of transistors (T4, T5) connected in series, one being controlled by the condition $T_B < T_{ok}$, and the other one in the pair being controlled through an OR gate by all other conditional restart inputs (1 to 4).

6. The control unit as claimed in claim 1, further comprising switches (S3), and a further thyristor (Th6), wherein the respective stop inputs of said conditional

prohibition circuit being connected through said switches (S3) to the control electrode of this further thyristor (Th6), said charger circuit (CH) having a mode selector input adjusting a second charging mode with decreased charging power, and the further thyristor (Th6) when being set into conductive state enabling said second charging mode, and this conductive state being maintained till the end of the battery charging process.

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7. The control unit as claimed in claim 1, comprising a manually operated switch (S1) allowing the commencement of the charging process in spite of an existing final prohibition command generated because of the low level of the battery voltage to enable manual starting, whereby the low battery voltage is allowed to increase above the threshold value U_o

Add A10

8. The control unit as claimed in claim 1, comprising a charge power controller (SK) connected to said charging circuit (CH) for to supply alternating power thereto with variable flowing angle, wherein in said prohibition modes said charge power controller (SK) being controlled to continuously decrease the flowing angle, and in said charging mode the flowing angle is continuously increased.